

CLAIMS

What is claimed is:

1. A container assembly, comprising a fitting and a wall,
said wall defining a container with an interior and an exterior surface,
5 said wall having a fitting portion in said fitting and a container portion forming
said container beyond said fitting, and
said fitting comprising an inner component and an outer component,
said outer component being bonded at a first end to said wall and having an
outer portion that extends outwardly from said exterior surface of said
10 container, at least a portion of said inner component being situated inside of
said outer portion of said outer component, wherein said fitting portion of said
wall is apposed to said inner component and to said outer component in said
outer portion of said outer component, wherein said fitting portion of said wall
is continuous with said container portion.
- 15 2. The assembly of claim 1, wherein said container wall comprises
a layer impermeable to hydrocarbons.
3. The assembly of claim 1, wherein said container is a fuel tank
for a vehicle, and said fitting is selected from the group consisting of a fuel
inlet fitting, a vapor control valve fitting, and a sender unit attachment fitting.
- 20 4. The assembly of claim 1, wherein said outer component
comprises high density polyethylene, and said inner component comprises an
acetal.

5. The assembly of claim 1, wherein said container wall comprises a layer of ethylene vinyl alcohol copolymer.

6. The assembly of claim 1, wherein said container wall comprises an inner layer of ethylene vinyl copolymer and at least one outer layer of high density polyethylene.

7. The assembly of claim 6, wherein said fitting portion of said wall has an average thickness of between about 1 mm to about 8 mm.

8. The assembly of claim 4, wherein said container wall comprises a layer of ethylene vinyl alcohol copolymer.

9. A method of forming a container, said method comprising the steps of:

10 bonding at least one exterior fitting component to a wall forming material during formation of the container, said exterior fitting component having an exterior portion and a passageway from said exterior portion to a first end opening, wherein said bonding step causes said first end opening to be covered by said wall forming material, and

15 inserting an interior fitting component into said exterior fitting component exterior portion via said first end opening to cause said wall forming material to extend into said exterior portion of said exterior fitting component.

20 10. The method of claim 9, wherein said wall forming material comprises a thermoplastic material.

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11. The method of claim 9, wherein said exterior fitting component comprises high density polyethylene.

12. The method of claim 9, wherein said wall forming material comprises a layer of material impermeable to hydrocarbons.

5 13. The method of claim 9, wherein said wall forming material comprises a layer of ethylene vinyl alcohol copolymer.

14. The method of claim 9, wherein said wall forming material comprises an inner layer of ethylene vinyl alcohol copolymer and at least one outer layer of high density polyethylene.

10 15. The method of claim 9, wherein said wall forming material comprises a thermoplastic material, said exterior fitting component is bonded to said container wall forming material during thermoplastic forming of said container, and insertion of said interior fitting into said exterior fitting component is used to thermoform said wall forming material into said exterior fitting.

15 16. The method of claim 9, wherein said container is formed by a process selected from the group consisting of twin sheet thermoforming, and blow molding.

20 17. The method of claim 15, wherein said inserting step is performed at a temperature between about 360°F and about 430 °F.

18. A vehicle fuel tank produced by the process of claim 9.

19. A vehicle fuel tank produced by the process of claim 17.

20. A low permeability fitting for a low permeability container, comprising an inner component, and an outer component, wherein said outer component has a first end for bonding attachment to a low permeability container wall and a second end that extends away from a container wall upon bonding attachment of said first end to a low permeability container wall, said inner component has a first end that may be inserted through said first end of said outer component and into said second end of said outer component, wherein when said first end of said inner component is inserted through said first end of said outer component into said second end of said outer component a gap is defined therebetween sufficient to accommodate a portion of low permeability wall material to which said outer component may be bonded.

15 21. The fitting of claim 20, wherein said outer component is formed of a material comprising high density polyethylene.

22. The fitting of claim 20, wherein said outer component comprises a first cylinder and said inner component comprises a second cylinder, said first and second cylinders each having a first end and a second end, wherein said first end of said first cylinder comprises a flange that may be bonded to the wall of a container so that said second end of said first cylinder projects outward from the container, said first end of said second cylinder being insertable into said first end of said first cylinder to extend towards said

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second end of said first cylinder portion, wherein the outer diameter of said first end of said second cylinder is sufficiently smaller than the inner diameter of said first end of said first cylinder to form a gap to accommodate a desired thickness of container wall material, wherein a low permeability wall material may be formed between said second cylinder and said first cylinder by bonding said flange to a low permeability wall material followed by insertion of said first end of said second cylinder into the first end of said first cylinder.

23. The fitting of claim 22, wherein said second cylinder further comprises gripping projections on said first end of said second cylinder to facilitate insertion of low permeability wall material into said first cylinder.

24. A fuel tank inlet fitting, comprising an inner component, and an outer component, wherein said inner component and outer component can cooperate with a portion of a low permeability wall that forms a low permeability fuel storage container to integrally form said fitting to the container, wherein at least a portion of said inner and outer component will extend outwardly of a container to which said fitting may be integrally formed, and wherein, when said fitting is integrally formed to a container, a portion of the container wall is between the portions of said inner component and said outer component that extend outwardly from the container whereby the permeability properties of the storage container wall are extended to the fitting.

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